

## ABSTRACT

### SUPERCHARGED OPEN CYCLE GAS TURBINE ENGINE

The present invention provides a supercharged open cycle gas turbine engine  
5 comprising a core engine for generating shaft power output, said core engine includes a  
multi-stage compressor, the first stage of which being a rotary ram compressor or a rotary  
ram-in compressor; a supercharger for increasing the pressure of intake air of the core  
engine, said supercharger includes a rotary ram-in compressor and a turbine driven by  
gases discharged from the core engine and having variable-area nozzle assembly;  
10 operator controlled means for elective bleeding of variable part of the exhaust gases  
discharged from the core engine and supplied to the supercharger turbine; at least one  
pressure sensor for detecting the degree of rise in the pressure of air supplied by the  
supercharger's compressor; means for adjusting the area of the nozzles of the  
supercharger's turbine according to the detected degree of rise in the air pressure; and  
15 means for adjusting the rate of fuel supply to the core engine according to the pressure  
level of air supplied by the supercharger's compressor.